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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,950	06/27/2001	Shunpei Yamazaki	07977/280001/US5027	6263
26171	7590	03/23/2006	EXAMINER	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EVERHART, CARIDAD	
			ART UNIT	PAPER NUMBER
			2891	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/894,950

Applicant(s)

YAMAZAKI ET AL.

Examiner

Caridad M. Everhart

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-78 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-20, 32-46, 55-59, 62, 64, 66, 67, 70, 72, 74, 75 and 78 is/are allowed.
- 6) ☒ Claim(s) 1-10, 21-31, 47-54, 60, 61, 63, 65, 68, 69, 71, 73, 76 and 77 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### Response to Arguments

Applicant has amended to include the limitation "having a channel formation region" formed over the planarization region.

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-10, 21-31, 47-54, 60,61,63,65,68,69,71,73,76, and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita et al (US 6,259,200B1 ) in view of Sato et al (US 6,327,006B1) and further in view of Kim, et al. (US 6,100,954).

Morita et al discloses a device which is formed on an insulating surface which is an insulating substrate (Abstract and col. 8, lines 17-18), a gate line and a shielding film formed on the surface(col. 8, lines 19-24 and col. 2, lines 27-33), in which the disclosure that the gate and shielding film are formed concurrently of the same material discloses that they are formed on the same surface. The shielding film has a planarization film over it(col. 4, lines 30-36) and ITO film is over the planarization film(col. 4,lines 33-37), and this satisfies that there is a semiconductor film over the planarization film, as ITO is a semiconductor. The thickness of the shielding film and of the gate is 100nm, which is 0.1 micron(col. 6, lines 37-40). In Fig. 6 it is seen that the gate and shielding film are tapered. With respect to the limitation of a capacitance wiring, the lower metal

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of the gate line and the shielding layer can be considered the bottom capacitance wiring and the ITO layer can be considered that top capacitance wiring.

Morita et al is silent with respect to polishing or CMP being the planarization method of the planarization layer nor the channel forming region over the planarization layer nor the recited devices.

Kim, et al discloses a gate 113 with a planarization layer thereon, 157, and a channel formation region over the planarization layer, 119(col. 16, lines 45-65). In addition, Kim, et al disclose in Fig. 10G metallization 127, planarization layer 159, and metallization 131(col. 15, lines 44-60).

Although Kim, et al does not teach the shielding film, the function of the shielding film is not required(col. 16, lines 26-30), and the element is obvious if the elimination of the element is because its function is not desired(MPEP 2144.04).

Sato, et al disclose a planarized layer between the TFT and the upper ITO layer which is planarized by CMP(layer 100 shown in Fig. 3 and described in col. 3, lines 3-15).

It would have been obvious to one of ordinary skill in the art at the time of the invention that the channel forming layer could have been formed over the planarization layer in the method taught by Morita et al as is taught by Kim, et al because this would obtain the benefit taught by Kim, et al of eliminating the stepped surface(col. 4, lines 24-28), and improved aperture ratio(col. 16, lines 25-30).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have planarized the planarizing film in the process taught by Morita et al by

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using polishing or CMP because Sato et al teaches that the film in a similar device and because CMP is well known in the art. In addition, in the device claims it is the device which is rejected, and the method of planarization is not given patentable weight in a device claim.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the device taught by Morita et al in the recited devices because it is well known in the art that the recited devices include TFTs, and Morita et al teaches TFTs.

***Allowable Subject Matter***

Claims 11-20, 32-46, 55-59, 62, 64, 66, 67, 70, 72, 74, 75, and 78 are allowable. The prior art of record does not teach the TFT on the planarized layer in combination with the other limitations of the allowable claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caridad M. Everhart whose telephone number is 571-272-1892. The examiner can normally be reached on Monday through Fridays 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, B. Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*C. Everhart*  
CARIDAD EVERHART  
PATENT EXAMINER

C. Everhart  
3-18-2006